63. (Previously Added) An antibody which binds to a polypeptide encoded by at least 12 contiguous nucleic acid residues of a sequence comprising residues 792 to 884 of SEQ ID NO: 3, wherein said polypeptide has the same reading frame as the sequence of SEQ ID NO: 6.

64. (Previously Added) An antibody which binds to a polypeptide encoded by at least 12 contiguous nucleic acid residues of the sequence consisting of residues 792 to 884 of SEQ ID NO: 3, wherein said polypeptide has the same reading frame as the sequence of SEQ ID NO: 6.

65. (currently amended) The antibody of claim [72, 73, 74, or 75]61, 62, 63 or 64, wherein said antibody is a monoclonal antibody.

REMARKS

Claims 56-65 are currently pending in the application. It is noted that the examiner mentions in said office action that claims 67-76 which were newly added/amended in preliminary amendments mailed 6-5-03 and 5-23-03, have been renumbered as claims **55**-65, respectively, according to Rule 1.126. However, Applicant notes that "claims **55**-65" represent a set of 11 claims while "claims 67-76" represent a set of 10 claims. The numbering of the claims presented above in the "Listing of the Claims" indicates pending claims **56**-65 which were formerly numbered 67-76.

Claims 60 and 65 have been amended. The amendments find support in the specification and are discussed in the relevant sections below. No new matter is added.

Priority

Applicant has updated the priority information in the first paragraph of the application with the current status, as required by the Office action.

Specification

The Examiner asserts that the specification contains sequence disclosures which are encompassed by the requirements of 37 C.F.R. §1.821, but which are not properly indicated

in the specification. Specifically, the Examiner requests that Applicants amend the specification to include SEQ ID NO.s where appropriate.

Applicants submit that they have amended the Brief Description of the Figures and the specification to indicate sequence identifier numbers where appropriate. With respect to the paper and computer readable copy of the sequence listing, Applicants submit herewith a paper and computer readable copy of the sequence listing as requested. As required by 37 C.F.R. §1.821(f), Applicant's Attorney hereby states that the content of the "Sequence Listing" in paper form and the computer readable form of the "Sequence Listing" are the same and, as required by 37 C.F.R. §1.821(g), also states that the submission includes no new matter. Applicants request that the sequence listing be entered in the above-captioned application.

Applicant has amended the specification to include SEQ ID NO:s in the specification and figure legends.

Drawings

The Examiner asserts the figure legends are not descriptive, specifically Figures 1, 2 and 6. Applicant has amended the legends accordingly.

Claim Objections

Claim 60 is objected to because it depends on claims that are not presented for examination. Accordingly, Applicant has amended claim 60 such that it depends on claim 56, 57, 58 or 59, all of which are pending claims. In view of this amendment, the objection to Claim 60 may be properly withdrawn.

Similarly, Claim 65 has been amended to depend on claim 61, 62, 63 or 64, all of which are pending claims.

Claim Rejections – 35 USC § 112

Claims 56-59 and 61-65 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Office action further states that "This rejection is a new matter rejection". Applicant is assuming the New Matter rejection refers to Part A of Section 6.

Part A, New Matter.

The Office Action asserts In Section 6A, that the claims reciting an antibody to amino acid residues 185-215 of SEQ ID NO:6, or to the protein encoded by a nucleic acid comprising nucleotides 792-884 of SEQ ID NO:3 were not described in the original disclosure and constitute new matter. Applicant traverses the rejection on the grounds that the specification does in fact provide adequate written description of the antibodies encompassed by the instant claims.

The office action states the claims encompass antibodies that bind amino acid sequences which were not originally contemplated, and refers specifically amino acid residues 185-215 of SEQ ID NO:6, or to the protein encoded by a nucleic acid comprising nucleotides 792-884 of SEQ ID NO:3.

Page 29 and Figure 6 of the specification clearly denote each of the 31 residues of amino acid sequence of residues 185 to 215 of SEQ ID NO:6 which represents the mutant allele of Applicant's invention, (see bold amino acids in Figure 6B denoted by the CCR5 deletion mutant). As noted in the office action, the amino acid sequence of residues 185 to 215 of SEQ ID NO:6 result from a frame shift caused by a deletion. That the disclosure describes the antibodies is evidenced in at least the last few lines of page 8 of the specification which discloses an antibody which is preferably directed to an epitope of the peptide according to the invention.

These sequences describe the mutant allele of CCR5 which is at the heart of Applicant's invention. Applicant's invention as clearly disclosed in Figure 6 and on page 29, is a mutant form of human CCR5 receptor which lacks the last three transmembrane segments of CCR5 as well as regions involved in G protein coupling. Applicant has discovered that unlike wild type CCR5, the truncated receptor did not allow fusion with cells expressing the ENV protein (see

page 30), and that individuals homozygous for this CCR5 allele have apparently a strong resistance to infection (see last paragraph of page 33).

In view of the clear description in the original disclosure for the claimed antibodies directed to a novel subsequence of amino acids present in a mutant allele of the CCR5 receptor, said subsequence resulting from a frame shift deletion mutation which Applicant has discovered and fully disclosed, Applicants contend the antibodies recited in the instant claims do not constitute new matter. Accordingly, Applicant contends that this new matter rejection can properly be withdrawn.

Section 6B.

In Section 6B of the instant office action, Claims 56, 58, 61, 63 and 65 are rejected in a written description rejection.

The Office action states:

> "The specification discloses nucleotide sequence consisting of SEQ ID No. 3 amino acid sequence consisting of SEQ ID No. 6. However, the specification does not disclose all nucleotide sequence comprising SEQ ID No. 3 or amino acid sequence comprising SEQ ID No. 6".

Applicant notes that the claims do not recite a nucleotide sequence comprising SEQ ID No. 3, or an amino acid sequence comprising SEQ ID No. 6, but instead recites a subset of sequences comprising amino acid residues 185 to 215 of SEQ ID NO:6 and comprising nucleotides 792 to 884 of SEQ ID NO:3.

The office action further states:

> "With the exception of nucleotide sequence consisting of SEQ ID No. 3 amino acid sequence consisting of SEQ ID No. 6, the skilled artisan can not envision all the detailed structure of the claimed nucleotides encoding the polypeptide and amino acid sequences, regardless of the complexity or simplicity of the method of isolating the same. As a result, it does not appear that the inventors were in possession of the invention to use all nucleotides encoding the polypeptide and amino acid sequences as set forth in claims 56, 58, 61, 63 or 65 or that any modulation will treat cardiovascular diseases.".

Applicant contends that because only a limited portion of SEQ ID NO:3 or SEQ ID NO:6 is recited, the skilled artisan can envision all the detailed structure of the claimed nucleotides encoding the polypeptide and amino acid sequences. Further, Applicant notes that an epitope to which the antibody binds is generally localized to a discrete subsection of a larger sequence. Therefore, claims which recite antibodies directed to a subsection of a larger amino acid sequence, are described if the subsection comprising the epitopes is described. Accordingly, if the subsection can be envisioned by one of skill, than the recitation of the open language of "comprising" said subsection can be used in antibody claims, because the sequences outside the subsection to which the antibodies are directed are not material.

Therefore, reconsideration and withdrawal of the written description rejection is respectfully considered.

Applicant submits that all claims are allowable as written and respectfully request early favorable action by the Examiner. If the Examiner believes that a telephone conversation with Applicant's attorney/agent would expedite prosecution of this application, the Examiner is cordially invited to call the undersigned attorney/agent of record.

Respectfully submitted,

Date: 10/22/03

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